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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,242	12/22/2005	Geoffroy Peeters	PLS014	6074

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EXAMINER	
MILLIKIN, ANDREW R	
ART UNIT	PAPER NUMBER
2892	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,242	PEETERS, GEOFFROY	
	Examiner	Art Unit	
	Andrew Millikin	2892	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *122205; 031306*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 17, 18, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17: It is unclear what is meant by "isolated in the sequence by an integer number of mean durations." For the purposes of examination, examiner interprets this line as meaning that each segment has a length of an integer number of measures.

Claim 18: It is unclear what is meant by "a splitting into." For the purposes of examination, examiner interprets this as meaning "use of."

Claim 21: It is unclear which end and start segments are being referred to. For the purposes of examination, examiner interprets this as meaning the start and end segments of a segment.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 13-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims recite method steps of processing, transforming, determining, analyzing, evaluating, extracting, detecting, generating, and concatenating, but never positively state the production of a tangible, real-world result or effect.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 13-16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over document U as cited in the attached PTO-892 form in view of Sugano (U.S. Patent Application Publication 2001/0003813, hereafter '813).

Claims 13 & 16: Document U teaches a method of processing a sound sequence (see section 3, Algorithm Description) corresponding in particular to a piece of music comprising a succession such as a refrain and a chorus (see Abstract) in which: a) a spectral transform is applied to said sequence to obtain spectral coefficients varying as a function of time in said sequence (see section 3.1-3.2), b) at least one subsequence repeated in said sequence is determined by statistical analysis of said spectral coefficients (see section 3.5), and c) start and end instants of a first subsequence, such as a verse, and of a second subsequence, such as a refrain, are

evaluated (they are necessarily evaluated, since the entirety of each frame is analyzed; see section 3.2), but does not teach concatenating the first subsequence with the second subsequence.

'813 teaches that it is advantageous to represent audio using thumbnails consisting of multiple pieces of audio (Fig. 9d; [0070]) in order to better represent the content of an audio file [0070]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have concatenated two pieces of audio to form the audio thumbnail of Document U in order to have better represented the content of audio files.

Claims 14 & 16: Document U teaches the method of claim 13 further comprising: d) extraction of a repeated subsequence (see Abstract & section 3.5) so as to store, in a memory, sound samples representing said subsequence (see Abstract & section 1, Introduction).

Claim 15: Document U teaches picking out the most repetitive subsequence (section 3.5).

Claim 22: Document U teaches a system that automatically generates audio thumbnails for selections of popular music and that the system utilizes a database (section 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the system is implemented as a computer program.

7. Claims 17 & 19-21 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of document U and '813 applied to claim 16 in view of Matsumoto

(U.S. Patent No. 4,662,262, hereafter '262) and further in view of Laroche (U.S. Patent No. 6,316,712, hereafter '712) and Minamitaka (U.S. Patent No. 4,926,737, hereafter '737).

Claim 17 & 19-21: Document U and '813 teach the method of claim 16 wherein the extracts of the subsequences are non-contiguous in time (see Fig. 9d of '813), wherein d) includes: d1) detecting at least one cadence of a first subsequence so as to estimate the mean duration of a bar at said cadence (in document U, by estimating the beat of the music, they are necessarily also estimating the duration of a bar), as well as at least one end segment of the first subsequence and at least one start segment of the second subsequence (document U, section 3.1, describes beat-synchronous frame segmentation of a song, which normally would include the beat-synchronous frame segmentation of at least two subsequences in the song), of respective durations corresponding substantially to said mean duration (in document U, since they consist of frames that each have a length corresponding to a beat, they necessarily correspond to the mean duration of a bar) and d3) concatenating the first subsequence, the transition bar or bars and the second subsequence to obtain a stringing together of the first and of the second subsequence (see Claim 13 above). However, document U and '813 do not explicitly teach generating at least one transition bar of duration corresponding to said mean duration and comprising an addition of the sound samples of at least said end segment and of at least said start segment or that the segments are isolated in the sequence by an integer number of mean durations.

'262 teaches that in the playing of a musical piece, it is desired that the timing between the sounding of the last note of the piece in one play and the sounding of the first rote of the piece in a subsequent play be such that a smooth transition, without undue interruption and in tempo with the music, occurs. As a result, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have generated at least one transition bar of duration corresponding to said mean duration in order to have kept in tempo with the music.

'712 teaches that transitions between musical pieces having an addition of sound samples of an end segment and of at start segment in order to avoid discontinuities in transitioning between musical pieces (Fig. 9; column 8, lines 66-67; column 9, lines 1-8). As a result, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the sound samples in a transitional period in order to have avoided discontinuities in the transitioning of sound.

'737 teaches that choosing segments having a length equal to a measure helps maintain consistency in a music piece (column 20, lines 18-35). As a result, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have chosen segments having an integer number of mean durations.

Claim 20: In document U, by estimating the beat of the music, they are determining the metric of the sequence.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over document U, '813, '262, '712, and '737 as applied to claim 17 above, and further in view of Fujimori et al. (U.S. Patent No. 4,633,749, hereafter '749).

Document U, along with '813, '262, '712, and '737, teaches the method of claim 17, but doesn't teach using at least two windows have a rectangular, Hanning, or staircase Hanning shape, nor does it teach using a window having a flank that rises, a plateau, and a flank that descends over time. '749 teaches that using windows that have a flank that rises, a plateau, and a flank that descends over time (Fig. 25; column 27, lines 58-68 & column 28, lines 1-12) can help to eliminate deviation in an interpolation characteristic and to realize a smooth transition between segments (column 2, lines 16-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a window having a flank that rises, a plateau, and a flank that descends over time in order to have helped eliminate deviation in the a transition and to have realized a smooth transition between the segments

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Millikin whose telephone number is 571-270-1265. The examiner can normally be reached on M-R 6:30-4 and 6:30-3 Alternating Fridays (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARM

MICHAEL B. CLEVELAND
SUPERVISORY PATENT EXAMINER